

REMARKS

Claims 1, 3 and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by Fujii (US 5,663,628). Claims 1, 2, 5, 6, 11 and 12 were rejected under 35 U.S.C. §102(b) as being anticipated by Yoshikawa et al. (US 6,317,697). Claims 4 and 10 were rejected under 35 U.S. §103(a) as being unpatentable over Fujii in view of Seri et al. (US 5,994,877). Claims 7, 8 and 13 to 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fujii and Yoshikawa et al. in view of Kinoshita (US 5,703,469). Claims 16, 17, 19 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fujii and Yoshikawa et al. in view of Kinoshita.

Reconsideration of the application based on the following is respectfully requested.

Rejections under 35 U.S.C. §102(b) based on Fujii

Claims 1, 3 and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by Fujii (US 5,663,628).

Fujii shows a battery system and a curve of a number of cycles plotted against a depth of discharge.

Claim 1 recites: “A method for determining a deterioration of a battery, comprising:
measuring respective numbers of charge and discharge cycles at a plurality of depths of discharge of the battery;

determining a respective characteristic deterioration value for at least some of the charge and discharge cycles at each of the plurality of depths of discharge using a deterioration curve characteristic of a type of the battery; and

summing the determined characteristic deterioration values so as to obtain the deterioration of the battery.”

It is respectfully submitted that Fujii does not teach or disclose either “determining a respective characteristic deterioration value for at least some of the charge and discharge cycles at each of the plurality of depths of discharge using a deterioration curve characteristic of a type of the battery” or “summing the determined characteristic deterioration values so as to obtain the deterioration of the battery” as claimed.

There is no indication at all in Fujii that deterioration values are determined at each of the plurality of discharge depths. The cites in the Office Action to col. 11, lines 54 to 58 and to col. 10, lines 1 to 23 of Fujii do not indicate any summing at all. Col. 11, lines 58 to 59 of Fujii specifically states that “the depth of the discharge is set to 10%” in the embodiment discussed, which clearly indicates that Fujii does not sum deterioration values. In addition, it is respectfully submitted that “summing . . . values” does not include “summing one value” as asserted in the Office Action on page 7.

Withdrawal to the rejection to claim 1 and its dependent claims 3 and 9 under 35 U.S.C. §102(b) as being anticipated by Fujii (US 5,663,628) thus is respectfully requested.

With further respect to claim 3, claim 3 recites the method as recited in claim 1 wherein the deterioration curve is a continuous function defining a dependence of each characteristic deterioration value on the depth of the respective charge or discharge for the battery type. The curve in Fig. 6 of Fujii cited in the Office action is not a deterioration curve defining a dependence “of each characteristic value” as claimed, but rather cycle/depth curve. See Fig. 2 of the present application showing a deterioration curve. The deterioration curve limitation of Claim 9 is also not shown in Fujii.

Rejections under 35 U.S.C. §102(b) based on Yoshikawa et al.

Claims 1, 2, 5, 6, 11 and 12 were rejected under 35 U.S.C. §102(b) as being anticipated by Yoshikawa et al. (US 6,317,697).

Yoshikawa shows a battery life determination apparatus.

Claim 1 recites: “A method for determining a deterioration of a battery, comprising:
measuring respective numbers of charge and discharge cycles at a plurality of depths of discharge of the battery;

determining a respective characteristic deterioration value for at least some of the charge and discharge cycles at each of the plurality of depths of discharge using a deterioration curve characteristic of a type of the battery; and

summing the determined characteristic deterioration values so as to obtain the deterioration of the battery.”

It is respectfully submitted that Yoshikawa does not teach or disclose any of the steps, including “measuring respective numbers of charge and discharge cycles at a plurality of depths of discharge of the battery;” “determining a respective characteristic deterioration value for at least some of the charge and discharge cycles at each of the plurality of depths of discharge using a deterioration curve characteristic of a type of the battery;” and “summing the determined characteristic deterioration values so as to obtain the deterioration of the battery”; and certainly does not teach or disclose all of them. No plurality of depths for example is discussed in Yoshikawa at all, and the numbers of charge and discharge cycles are not measured at all; nor are any determined characteristic deterioration values summed at all so as to obtain the deterioration of the battery, as claimed. Even assuming arguendo that the microcontroller in Yoshikawa is capable measuring the number of charge and discharge cycles of a battery, Yoshikawa does not teach or disclose so measuring. Moreover, col. 9, lines 37 to 43 of Yoshikawa, cited in the Office Action on page 3, does not teach or disclose the claimed “summing”.

Withdrawal of the rejection to claim 1 and its dependent claims 2, 5, 6, 11 and 12 under 35 U.S.C. §102(b) as being anticipated by Yoshikawa et al. (US 6,317,697) thus is respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claims 4 and 10 were rejected under 35 U.S. §103(a) as being unpatentable over Fujii in view of Seri et al. (US 5,994,877). Claims 7, 8 and 13 to 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fujii as applied to claims 1, 3 and 9 and Yoshikawa et al. as applied to claims 2, 5, 6, 11 and 12 above in view of Kinoshita (US 5,703,469). Claims 16, 17, 19 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fujii as applied to claims 1, 3 and 9 and Yoshikawa et al. as applied to claims 1, 2, 5, 6, 11 and 12 above in view of Kinoshita.

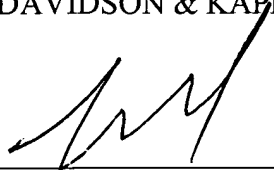
In view of the above comments with respect to Fujii and Yoshikawa et al., withdrawal of the rejections to claims 4, 7, 8, 10, 13 to 20 under 35 U.S.C. §103(a) thus is respectfully requested.

CONCLUSION

The present application is respectfully submitted as being in condition for allowance and applicants respectfully request such action.

Respectfully submitted,

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